Name:

at1113exam: Expand, factor, and solve quadratics (v318)

1. Expand the following expression into standard form.

$$(4x - 3)(8x + 5)$$

$$32x^2 + 20x - 24x - 15$$
$$32x^2 - 4x - 15$$

2. Expand the following expression into standard form.

$$(2x + 5)^2$$

$$4x^2 + 10x + 10x + 25$$
$$4x^2 + 20x + 25$$

3. Expand the following expression into standard form.

$$(7x - 8)(7x + 8)$$

$$49x^2 + 56x - 56x - 64$$
$$49x^2 - 64$$

4. Solve the equation.

$$(2x - 9)(8x + 3) = 0$$

$$x = \frac{9}{2} \qquad x = \frac{-3}{8}$$

5. Solve the equation with factoring by grouping.

$$12x^2 + 10x + 18x + 15 \;=\; 0$$

$$(2x+3)(6x+5) = 0$$

$$x = \frac{-3}{2} \qquad x = \frac{-5}{6}$$

6. Factor the expression.

$$81x^2 - 25$$

$$(9x-5)(9x+5)$$

7. Solve the equation.

$$12x^2 + 44x + 26 \;=\; 5x^2 - 3x - 4$$

$$7x^2 + 47x + 30 = 0$$

$$(7x+5)(x+6) = 0$$

$$x = \frac{-5}{7} \qquad x = -6$$

8. Factor the expression.

$$x^2 + 11x + 30$$

$$(x+5)(x+6)$$